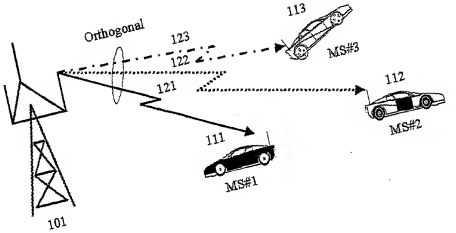

FIG. 1

200
Pilot
PiCH
210
Sync
32
(80/3 ms)
SyCH
1.2
214
Convolutional
Encoder
K=9 R=1/2
2.4
216
Repeater
×2
4.8
218
Block
Interleaver
AxB=96
4.8
219
Repeater
×4
19.2
220
Paging
96
192
PgCH#1
4.8
9.6
224
Convolutional
Encoder
K=9 R=1/2
9.6
19.2
226
Repeater
×2
×1
19.2
228
Block
Interleaver
AxB=384
19.2
236
19.2
230
Long
Code
Mask #p
42
232
Long
Code
Generator
1228.8
234
Decimator
64:1
19.2

FIG. 2a

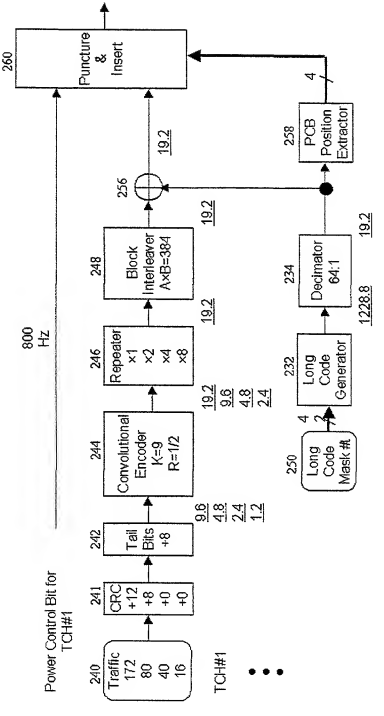
240
Traffic
172
80
40
16
241
CRC
+12
+8
+0
+0
242
Tail
Bits
+8
244
Convolutional
Encoder
K=9
R=1/2
246
Repeater
×1
×2
×4
×8
248
Block
Interleaver
AxB=384
256
260
Puncture
&
Insert
Power Control Bit for TCH#1
TCH#1
800
Hz
9.6
4.8
2.4
1.2
19.2
9.6
4.8
2.4
19.2
19.2
19.2
250
Long
Code
Mask #
232
Long
Code
Generator
234
Decimator
64:1
1228.8
19.2
258
PCB
Position
Extractor
4

FIG. 2b

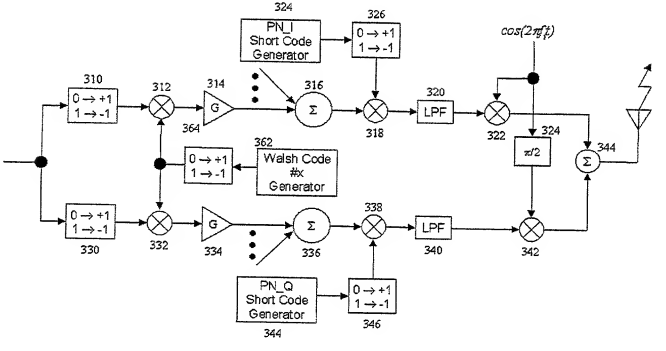
PN_I Short Code Generator
PN_Q Short Code Generator
Walsh Code #x Generator
0 → +1 1 → -1
G
Σ
LPF
π/2
cos(2πf_c t)
310
312
314
316
318
320
322
324
326
330
332
334
336
338
340
342
344
346
362
364

FIG. 3a

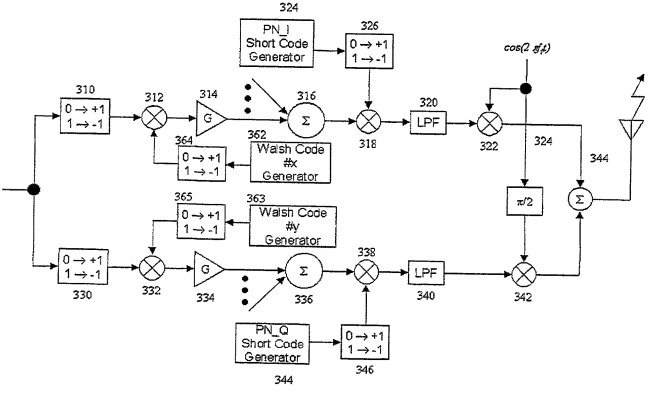
PN_I Short Code Generator
PN_Q Short Code Generator
Walsh Code #x Generator
Walsh Code #y Generator
0 → +1 1 → -1
G
Σ
LPF
π/2
cos(2 f_c t)
310
312
314
316
318
320
322
324
326
330
332
334
336
338
340
342
344
346
362
363
364
365

FIG. 3b

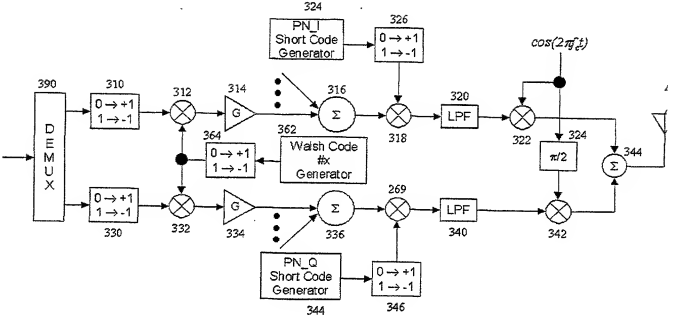
324
PN_I Short Code Generator
326
0 → +1 1 → -1
cos(2πf_c t)
390
DEMUX
310
312
314
G
316
Σ
318
320
LPF
322
324
π/2
344
362
Walsh Code #x Generator
364
330
332
334
336
269
340
342
PN_Q Short Code Generator
344
346

FIG. 3c

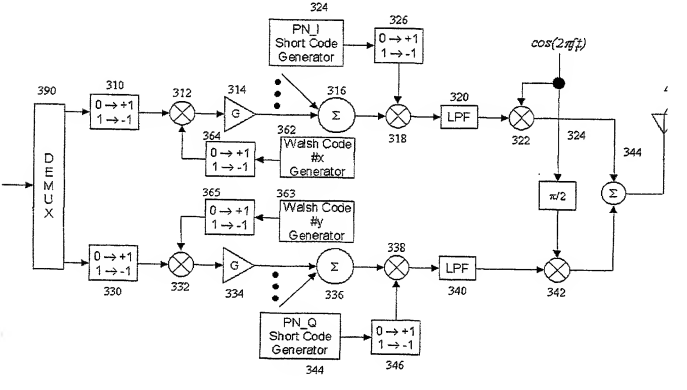
324
PN_I Short Code Generator
326
0 → +1 1 → -1
cos(2πf_c t)
390
DEMUX
310
312
314
G
316
Σ
318
320
LPF
322
324
344
π/2
362
Walsh Code #x Generator
364
365
Walsh Code #y Generator
363
330
332
334
336
338
340
342
PN_Q Short Code Generator
344
346

FIG. 3d

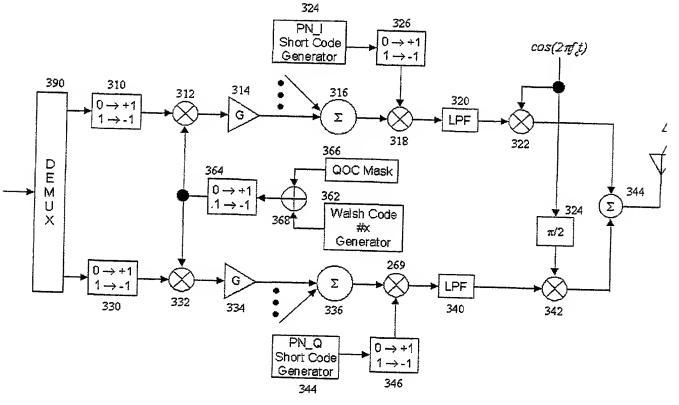
PN_I Short Code Generator
PN_Q Short Code Generator
QOC Mask
Walsh Code #x Generator
DEMUX
LPF
G
Σ
π/2
cos(2πf_c t)

FIG. 3e

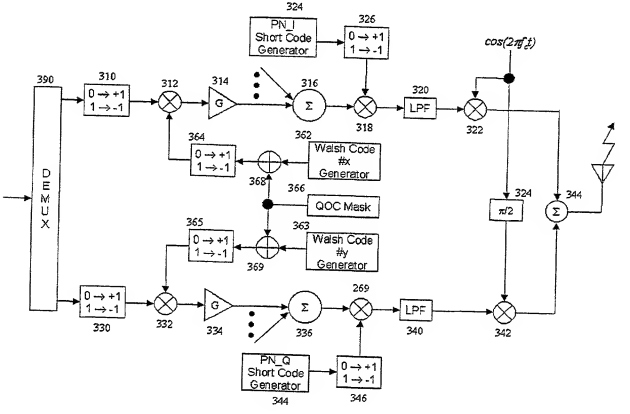
PN_I Short Code Generator
PN_Q Short Code Generator
QOC Mask
Walsh Code #x Generator
Walsh Code #y Generator
DEMUX
LPF
G
Σ
π/2
cos(2πf_c t)

FIG. 3f

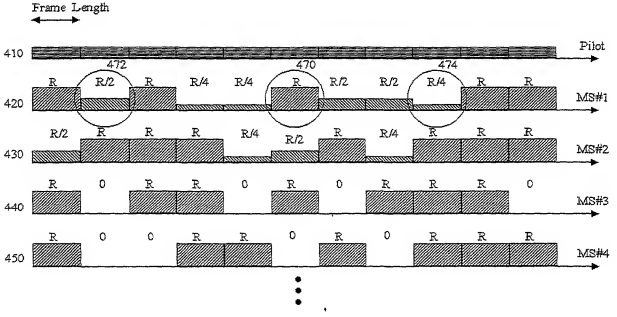
Frame Length
410
Pilot
472
470
474
420
MS#1
430
MS#2
440
MS#3
450
MS#4

FIG 4a

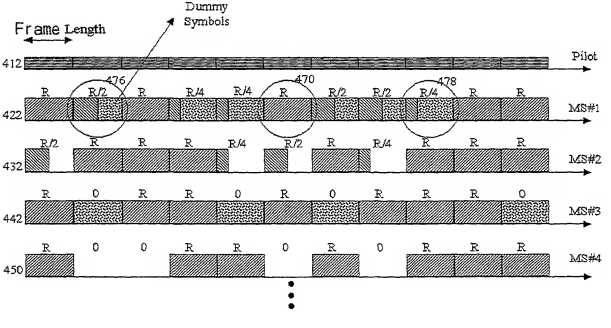
Dummy Symbols
Frame Length
412
Pilot
476
470
478
422
MS#1
432
MS#2
442
MS#3
450
MS#4

FIG. 4b

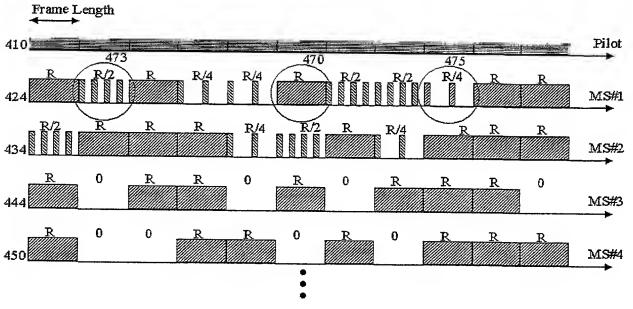
Frame Length
410
Pilot
473
470
475
424
MS#1
434
MS#2
444
MS#3
450
MS#4

FIG. 4c

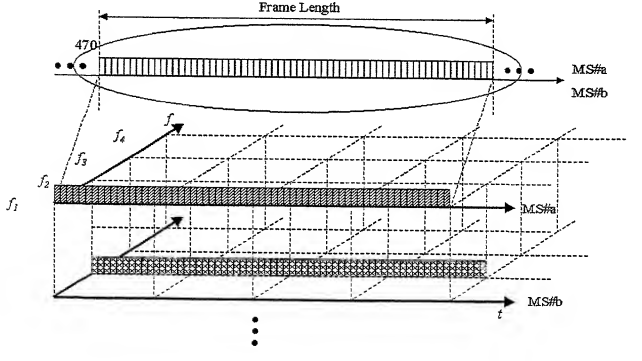
Frame Length
470
MS#a
MS#b
f_1
f_2
f_3
f_4
f_5
MS#a
MS#b
t

FIG. 4d

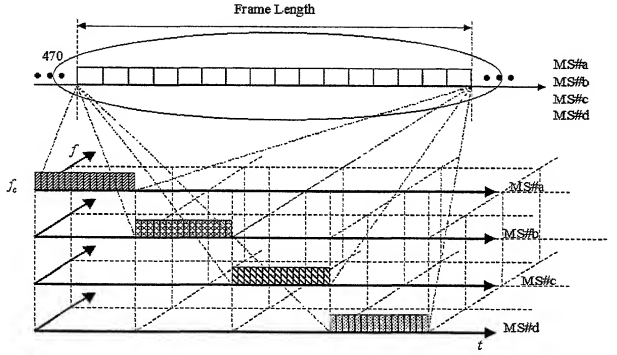
Frame Length
470
MS#a
MS#b
MS#c
MS#d
f
f_c
MS#a
MS#b
MS#c
MS#d
t

FIG. 4e

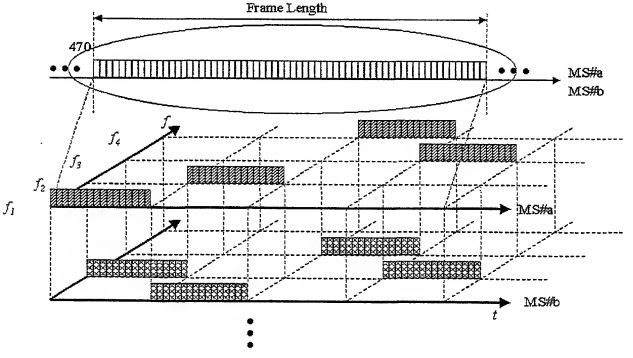
Frame Length
470
MS#a
MS#b
f
f_4
f_3
f_2
f_1
MS#a
MS#b
t

FIG. 4f

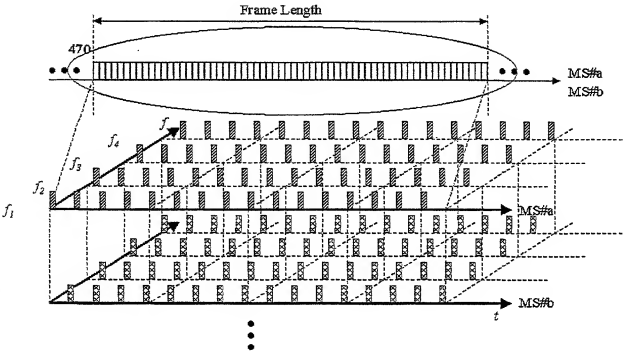
Frame Length
470
MS#a
MS#b
f_5
f_4
f_3
f_2
f_1
MS#a
MS#b
t

FIG. 4g

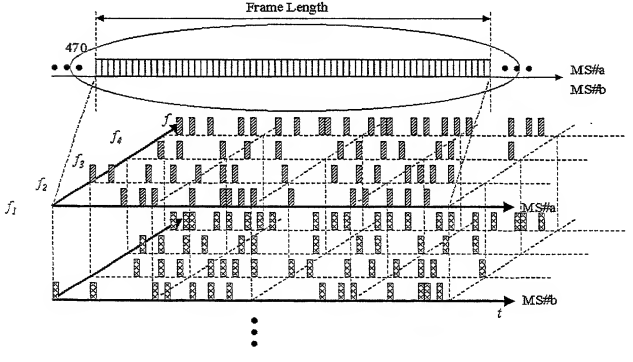
Frame Length
470
MS#a
MS#b
f_5
f_4
f_3
f_2
f_1
MS#a
MS#b
t

FIG. 4h

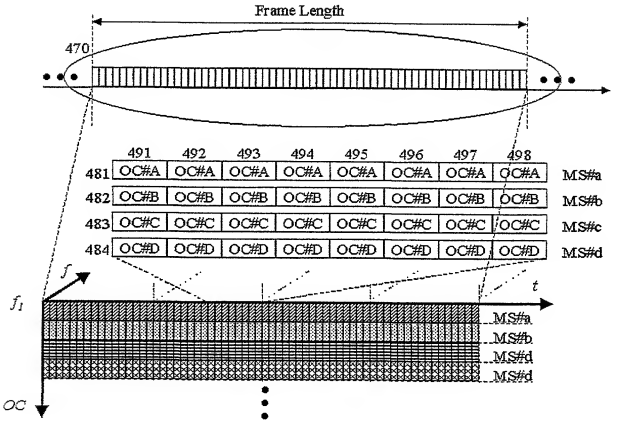
Frame Length
470
491 492 493 494 495 496 497 498
481 OC#A OC#A OC#A OC#A OC#A OC#A OC#A OC#A MS#a
482 OC#B OC#B OC#B OC#B OC#B OC#B OC#B OC#B MS#b
483 OC#C OC#C OC#C OC#C OC#C OC#C OC#C OC#C MS#c
484 OC#D OC#D OC#D OC#D OC#D OC#D OC#D OC#D MS#d
f
f_1
t
MS#a
MS#b
MS#d
MS#d
OC

FIG. 4i

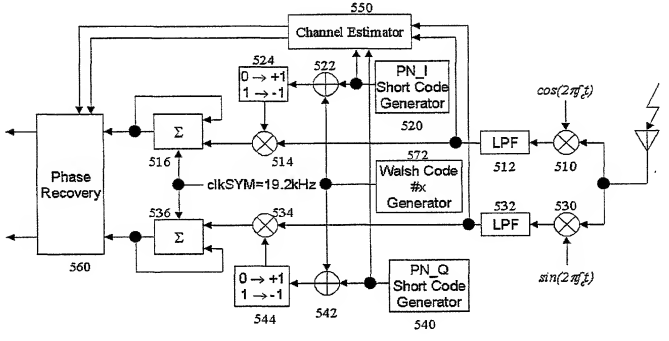
550
Channel Estimator
524
0 → +1
1 → -1
522
PN_I
Short Code
Generator
520
cos(2πf_c t)
LPF
512
510
572
Walsh Code
#x
Generator
clkSYM=19.2kHz
Phase
Recovery
516
514
536
534
532
530
LPF
560
0 → +1
1 → -1
544
542
PN_Q
Short Code
Generator
540
sin(2πf_c t)

FIG. 5

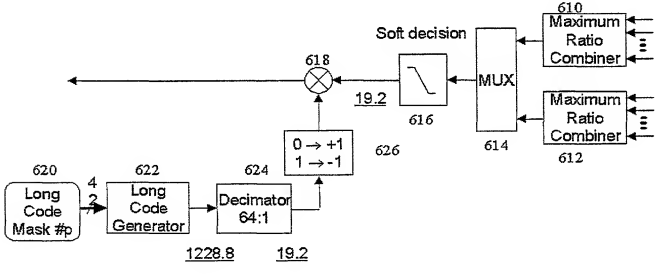
610
Maximum
Ratio
Combiner
Soft decision
618
19.2
616
MUX
614
Maximum
Ratio
Combiner
612
0 → +1
1 → -1
626
620
Long
Code
Mask #p
4
2
622
Long
Code
Generator
624
Decimator
64:1
1228.8
19.2

FIG. 6

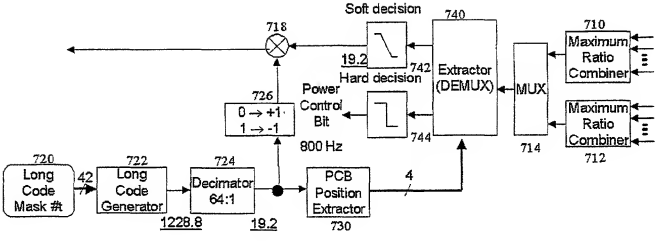
Soft decision
740
718
710
Maximum Ratio Combiner
19.2
742
Hard decision
Extractor (DEMUX)
MUX
726
Power Control Bit
0 → +1
1 → -1
744
Maximum Ratio Combiner
712
714
800 Hz
720
Long Code Mask #
42
722
Long Code Generator
724
Decimator 64:1
PCB Position Extractor
4
1228.8
19.2
730

FIG. 7

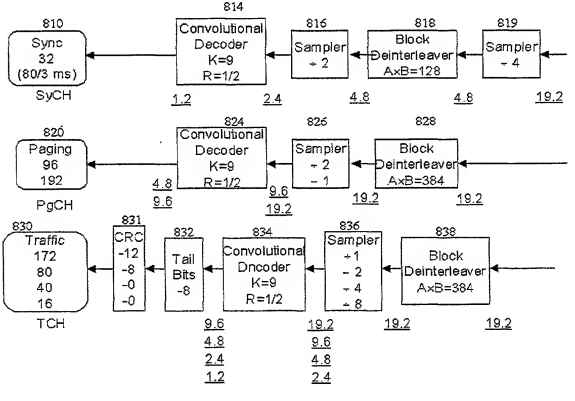
814
810
Sync 32 (80/3 ms)
Convolutional Decoder K=9 R=1/2
816
Sampler ÷ 2
818
Block Deinterleaver AxB=128
819
Sampler ÷ 4
SyCH
1.2
2.4
4.8
4.8
19.2
820
Paging 96 192
824
Convolutional Decoder K=9 R=1/2
826
Sampler ÷ 2 ÷ 1
828
Block Deinterleaver AxB=384
PgCH
4.8
9.6
9.6
19.2
19.2
19.2
830
Traffic 172 80 40 16
831
CRC -12 -8 -0 -0
832
Tail Bits -8
834
Convolutional Dncoder K=9 R=1/2
836
Sampler ÷1 ÷ 2 ÷ 4 ÷ 8
838
Block Deinterleaver AxB=384
TCH
9.6
4.8
2.4
1.2
19.2
9.6
4.8
2.4
19.2
19.2

FIG. 8

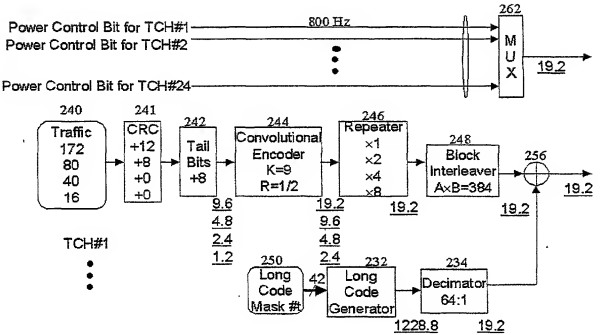
Power Control Bit for TCH#1
Power Control Bit for TCH#2
Power Control Bit for TCH#24
800 Hz
262
MUX
19.2
240
Traffic
172
80
40
16
241
CRC
+12
+8
+0
+0
242
Tail Bits
+8
9.6
4.8
2.4
1.2
244
Convolutional Encoder
K=9
R=1/2
19.2
9.6
4.8
2.4
246
Repeater
×1
×2
×4
×8
19.2
248
Block Interleaver
A×B=384
19.2
256
19.2
TCH#1
250
Long Code Mask #
42
232
Long Code Generator
1228.8
234
Decimator 64:1
19.2

FIG. 9a

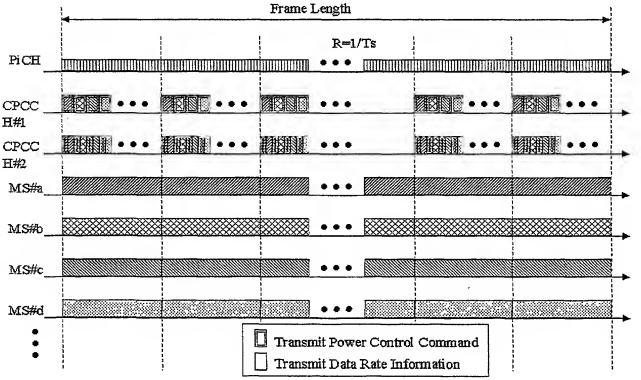
Frame Length
R=1/Ts
PiCH
CPCCH#1
CPCCH#2
MS#a
MS#b
MS#c
MS#d
Transmit Power Control Command
Transmit Data Rate Information

FIG. 9b

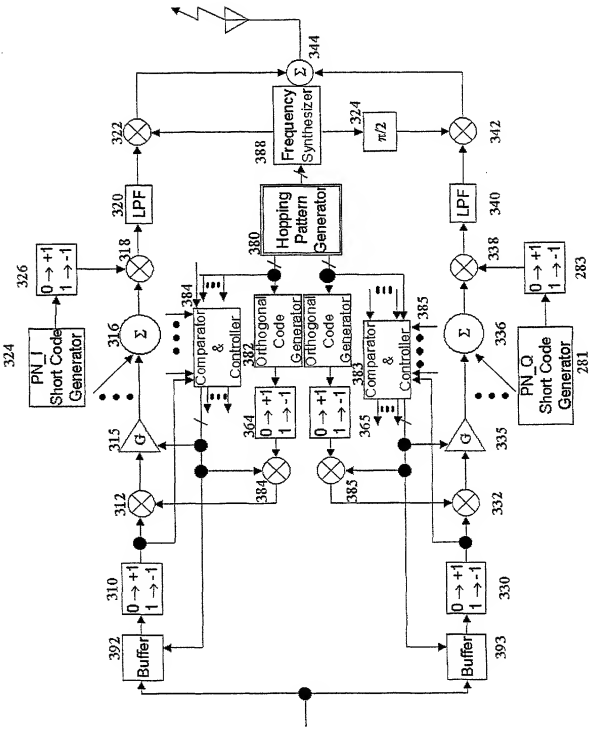
PN_I Short Code Generator
PN_Q Short Code Generator
Frequency Synthesizer
Hopping Pattern Generator
Orthogonal Code Generator
Comparator & Controller
Buffer
LPF
π/2
0 → +1
1 → -1

FIG. 10a

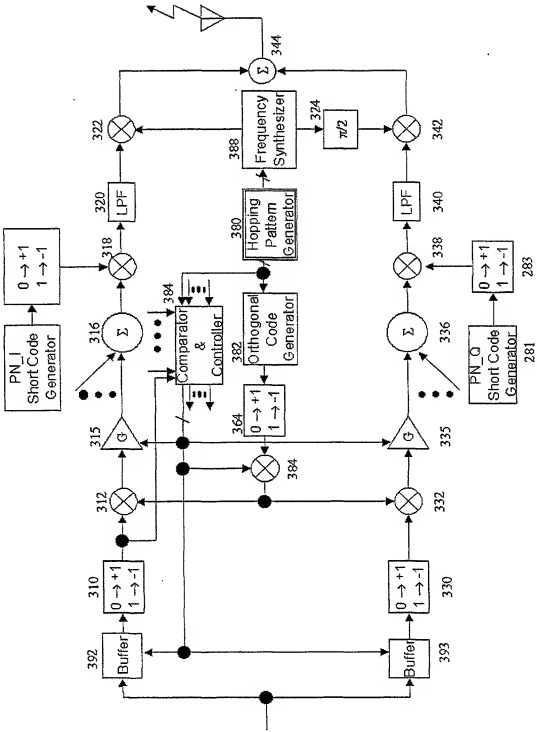
344
Σ
322
388
Frequency Synthesizer
324
π/2
342
320
LPF
380
Hopping Pattern Generator
340
LPF
326
0 → +1
1 → -1
318
384
Comparator & Controller
382
Orthogonal Code Generator
338
0 → +1
1 → -1
283
324
PN_I Short Code Generator
316
Σ
336
PN_Q Short Code Generator
281
364
0 → +1
1 → -1
315
G
335
G
384
312
332
310
0 → +1
1 → -1
330
0 → +1
1 → -1
392
Buffer
393
Buffer

FIG. 10b

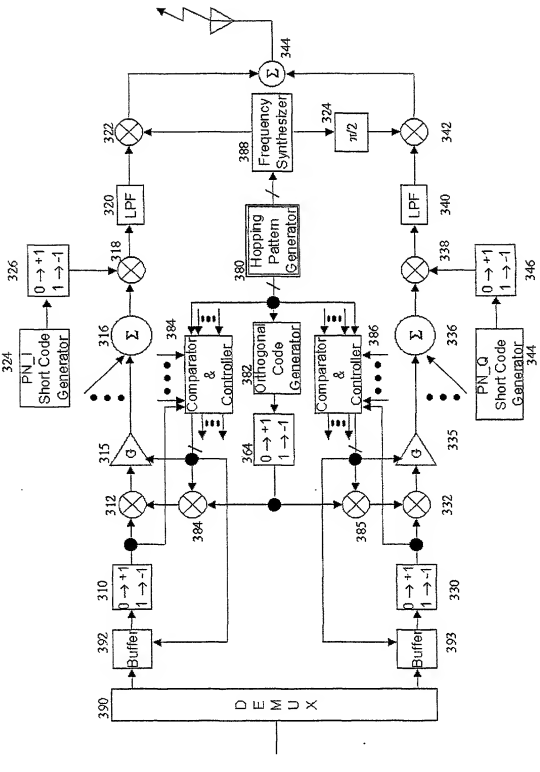
DEMUX
390
Buffer
392
Buffer
393
310
330
0 → +1
1 → -1
312
332
394
385
315
335
364
382
Orthogonal Code Generator
384
386
Comparator & Controller
Comparator & Controller
316
336
PN_I Short Code Generator
324
PN_Q Short Code Generator
344
326
346
318
338
320
340
LPF
LPF
322
342
388
Frequency Synthesizer
380
Hopping Pattern Generator
324
π/2
344

FIG. 10c

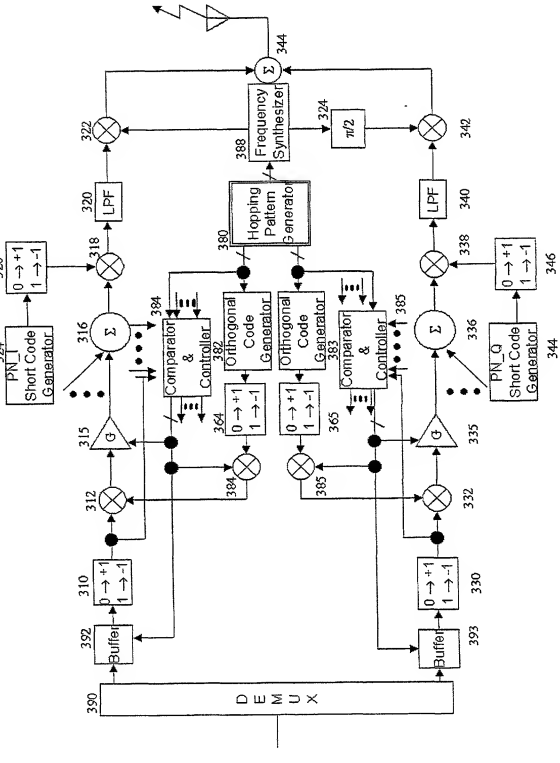
344
Σ
322
Frequency Synthesizer
388
π/2
324
342
LPF
320
340
Hopping Pattern Generator
380
318
338
326
0 → +1
1 → -1
346
PN_I Short Code Generator
324
316
Σ
394
Comparator & Controller
382
Orthogonal Code Generator
Orthogonal Code Generator
383
Comparator & Controller
385
336
PN_Q Short Code Generator
344
315
G
364
365
335
312
384
385
332
310
330
392
Buffer
393
Buffer
390
D E M U X

FIG. 10d

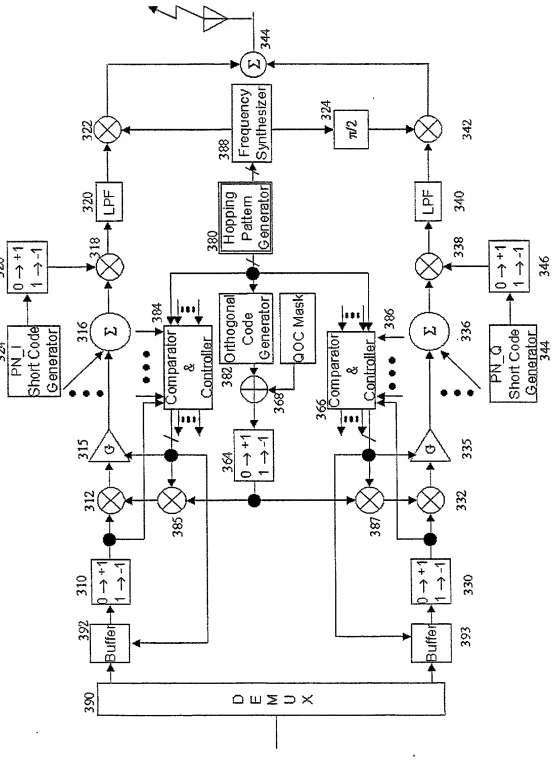
DEMUX
390
Buffer
392
Buffer
393
310
330
312
332
315
335
385
387
364
366
369
Comparator & Controller
384
Comparator & Controller
386
Orthogonal Code Generator
382
QOC Mask
PN_I Short Code Generator
324
PN_Q Short Code Generator
344
316
336
318
338
326
346
320
340
LPF
LPF
322
342
Hopping Pattern Generator
380
Frequency Synthesizer
388
π/2
324
344
0 → +1
1 → -1

FIG. 10e

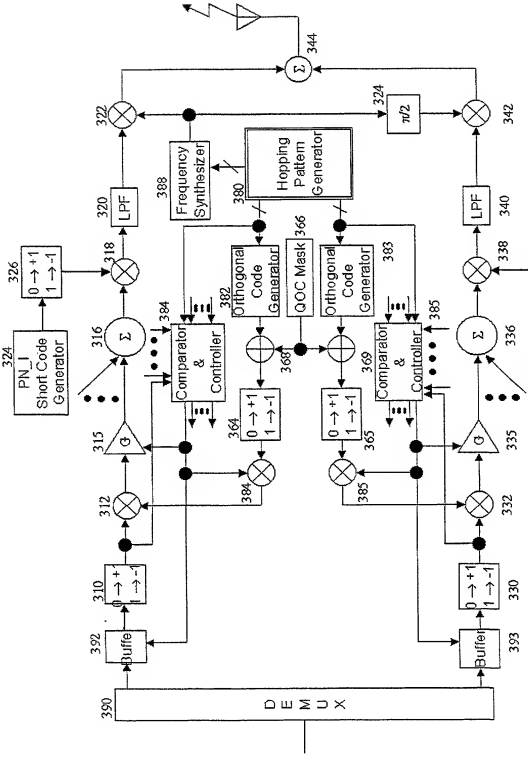
PN_I Short Code Generator
PN_Q Short Code Generator
Comparator & Controller
Orthogonal Code Generator
QOC Mask
Hopping Pattern Generator
Frequency Synthesizer
LPF
Buffer
DEMUX
0 → +1
1 → -1
Σ
G
π/2

FIG. 10f

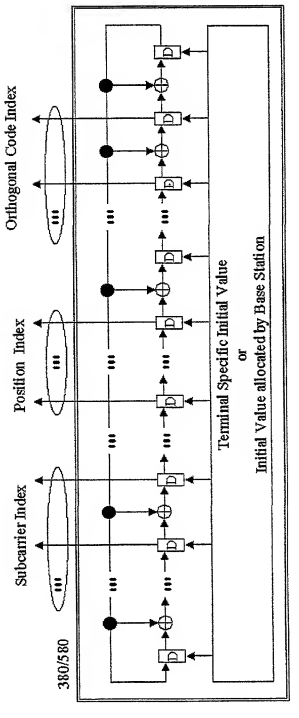
Orthogonal Code Index
Position Index
Subcarrier Index
380/580
Terminal Specific Initial Value
or
Initial Value allocated by Base Station

FIG. 11

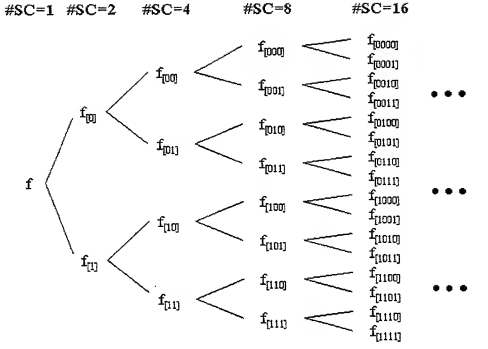

FIG. 12a

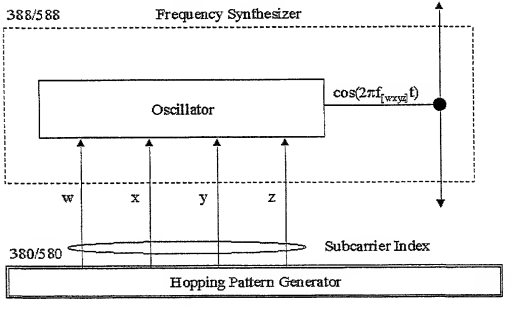

FIG. 12b

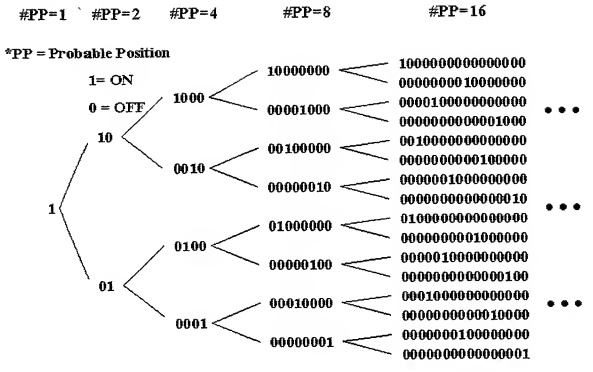
#PP=1
#PP=2
#PP=4
#PP=8
#PP=16
*PP = Probable Position
1= ON
0 = OFF
1
10
01
1000
0010
0100
0001
10000000
00001000
00100000
00000010
01000000
00000100
00010000
00000001
1000000000000000
0000000010000000
0000100000000000
0000000000001000
0010000000000000
0000000000100000
0000001000000000
0000000000000010
0100000000000000
0000000001000000
0000010000000000
0000000000000100
0001000000000000
0000000000010000
0000000100000000
0000000000000001

FIG. 12c

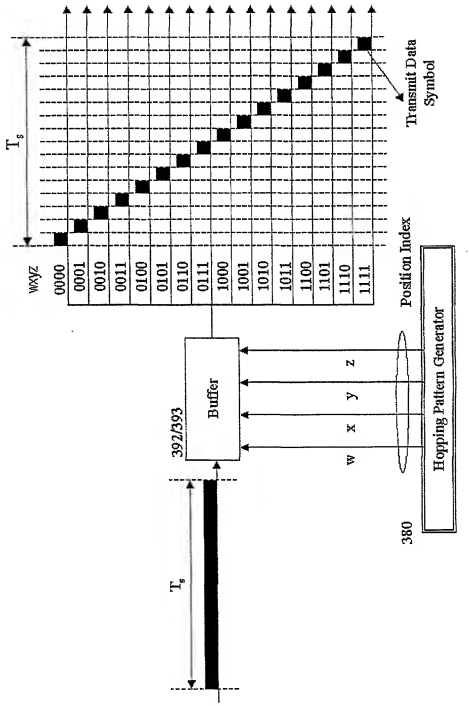
Transmit Data Symbol
T_s
wxyz
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
Position Index
Buffer
392/393
w x y z
Hopping Pattern Generator
380
T_g

FIG. 12d

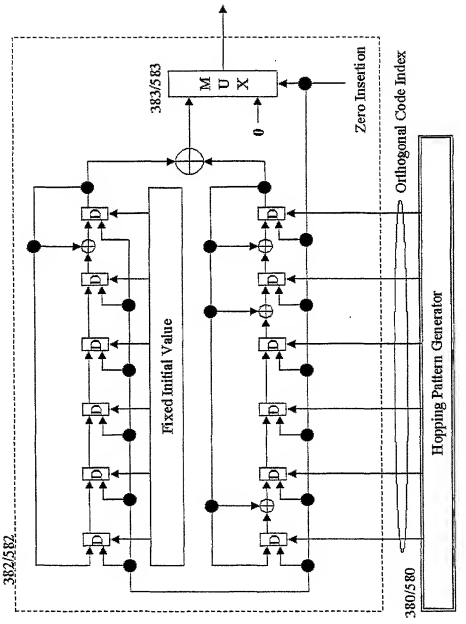
383/583
M
U
X
0
Zero Insertion
Orthogonal Code Index
D
Fixed Initial Value
Hopping Pattern Generator
382/582
380/580

FIG. 12e

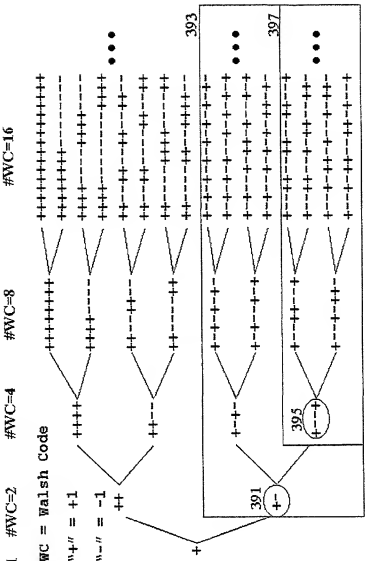

FIG. 12f

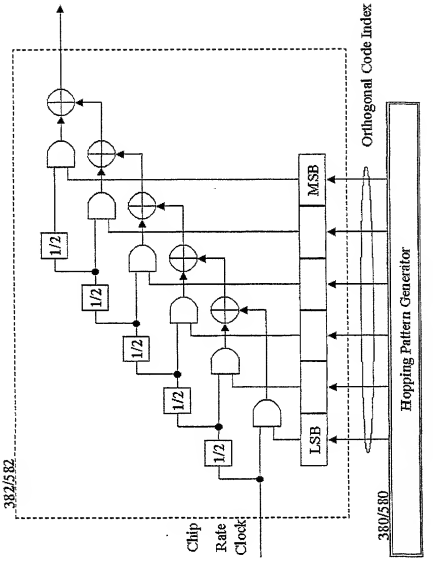
Orthogonal Code Index
MSB
LSB
1/2
1/2
1/2
1/2
1/2
382/582
Chip Rate Clock
380/580
Hopping Pattern Generator

FIG. 12g

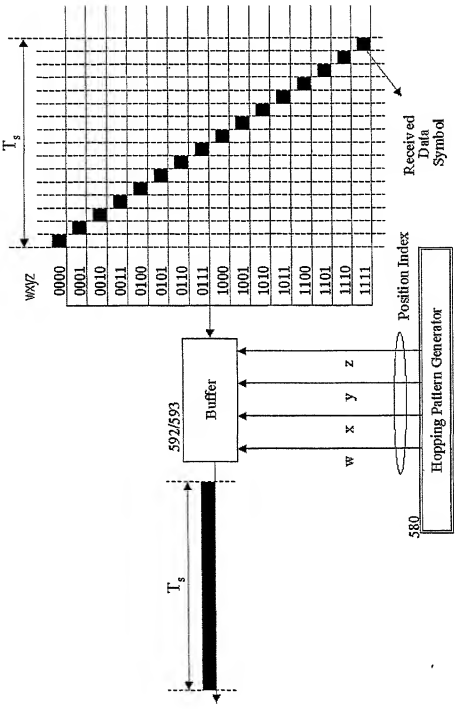
T_s
wxyz
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
Received Data Symbol
Position Index
Buffer
592/593
w x y z
Hopping Pattern Generator
580
T_s

FIG. 12h

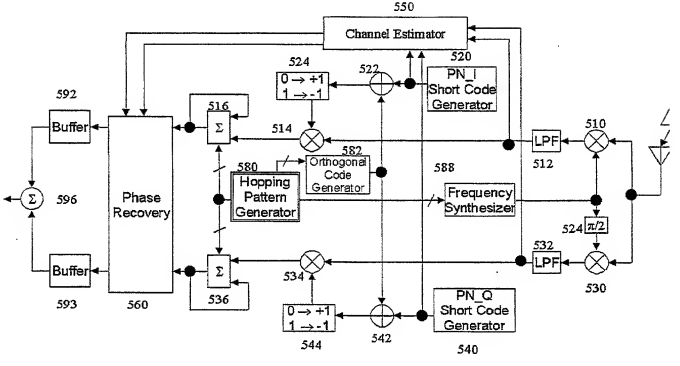

FIG. 13a

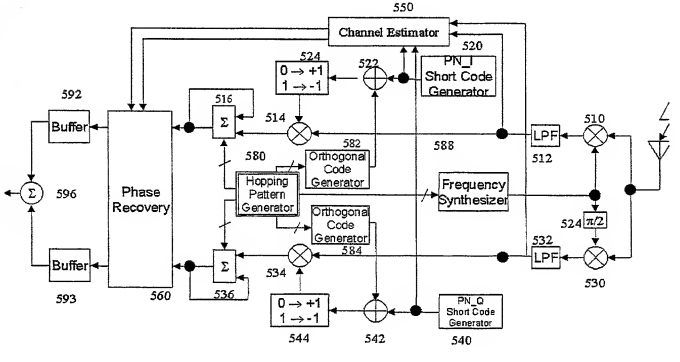

FIG. 13b

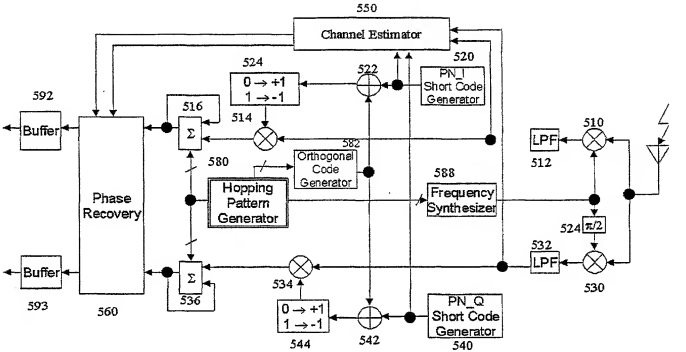

FIG. 13c

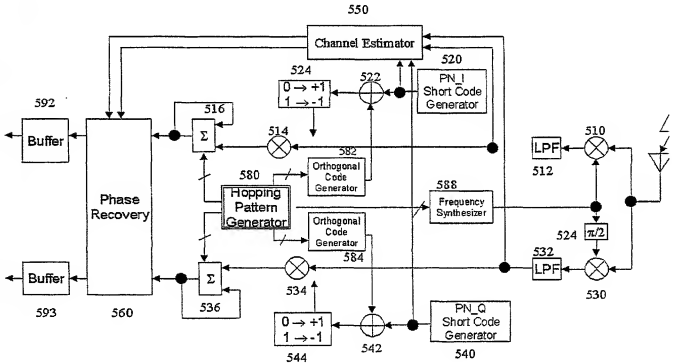

FIG. 13d

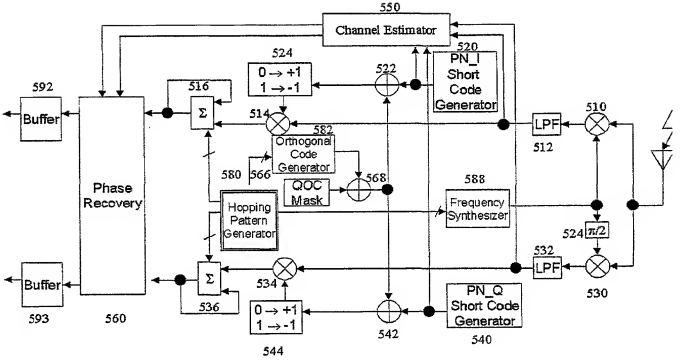

FIG. 13e

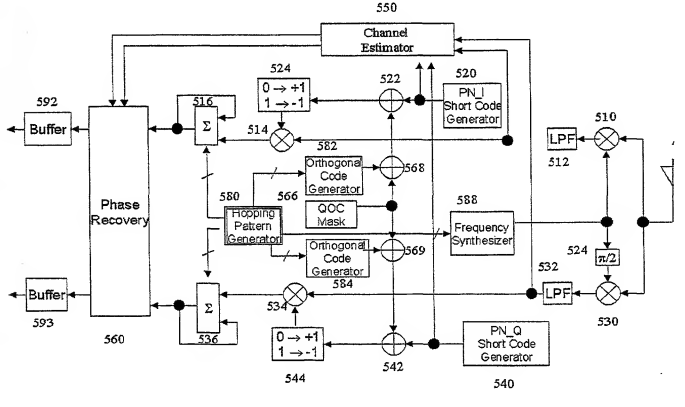

FIG. 13f

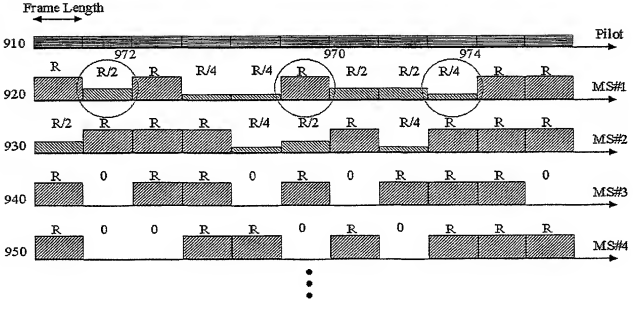

FIG. 14a

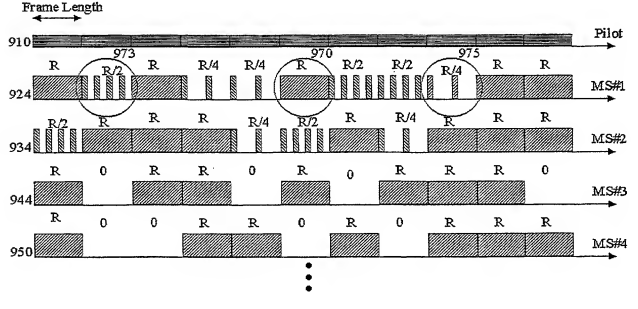

FIG. 14b

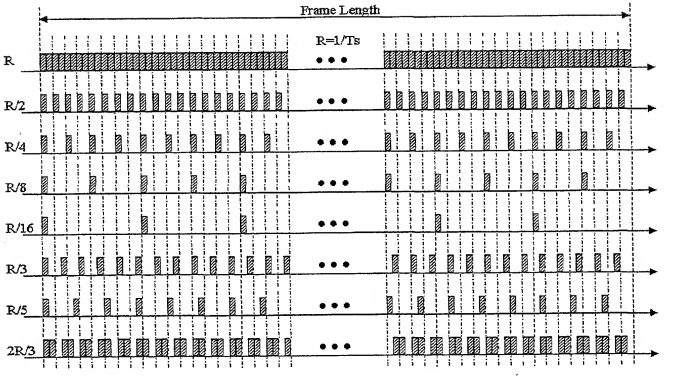

FIG. 14C

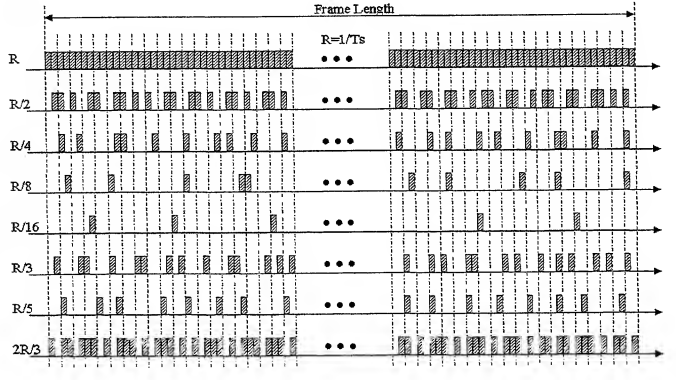

FIG. 14d

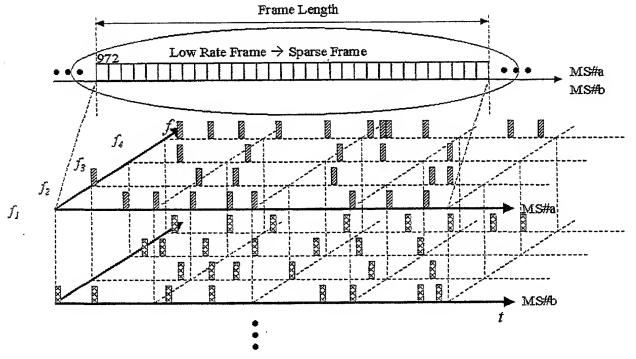

FIG. 14e

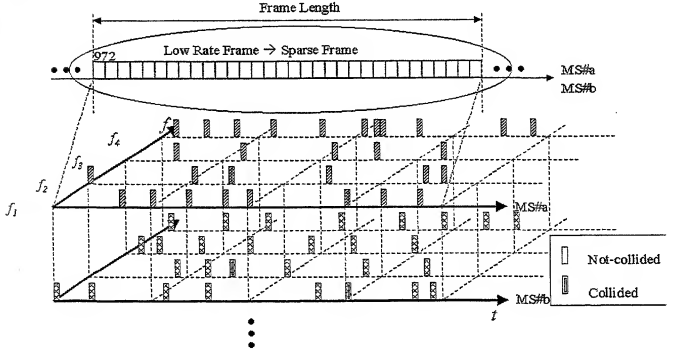

FIG. 14f

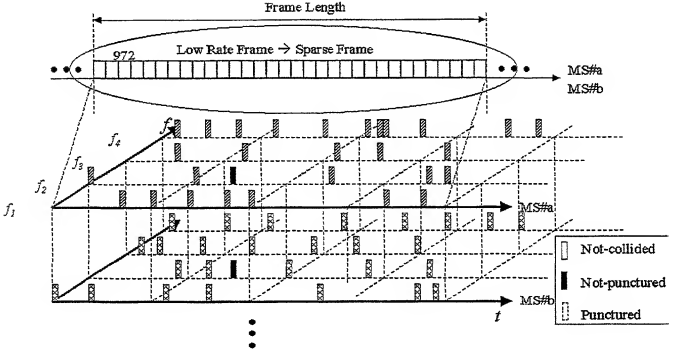

FIG. 14g

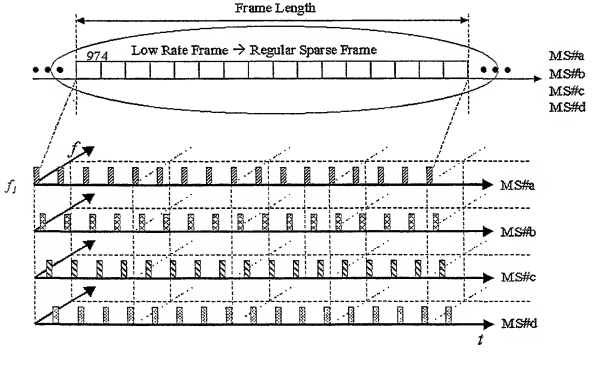

FIG. 14h

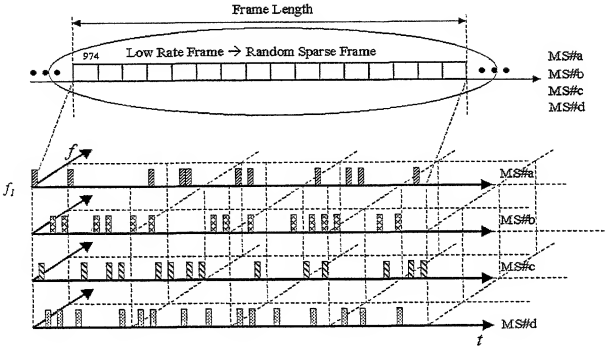

FIG. 14i

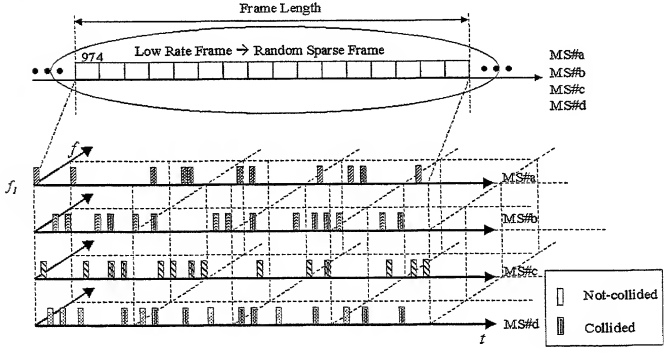

FIG. 14j

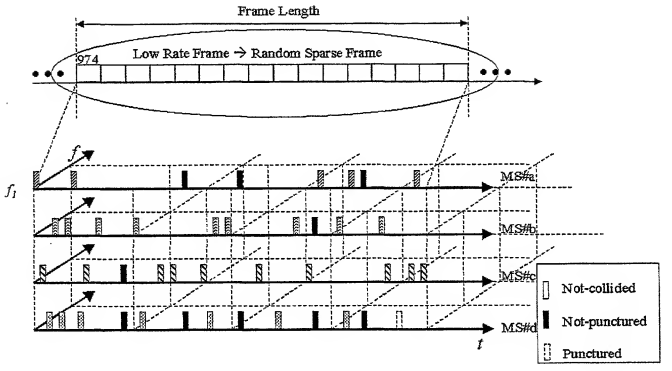

FIG. 14k

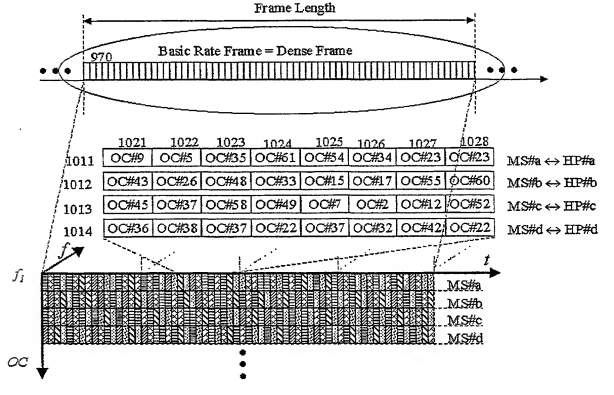

FIG. 141

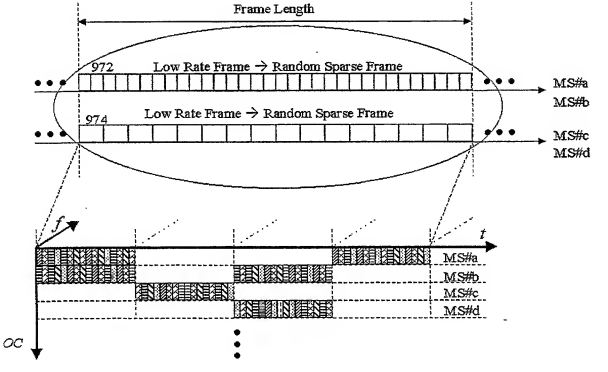

FIG. 14m

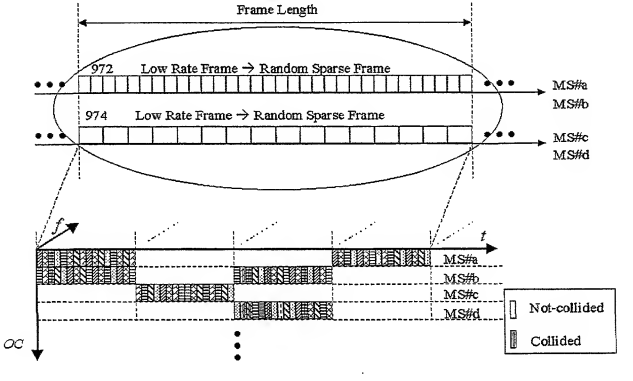

FIG. 14n

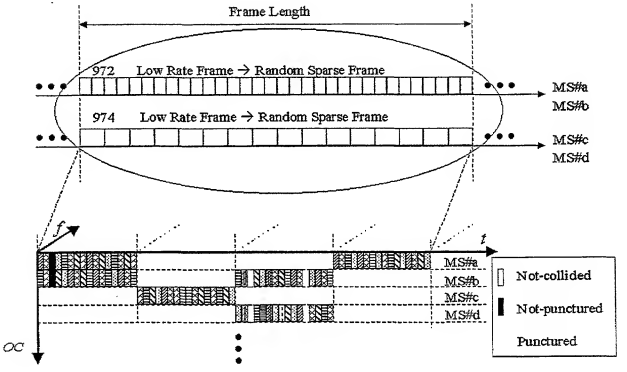

FIG. 14o

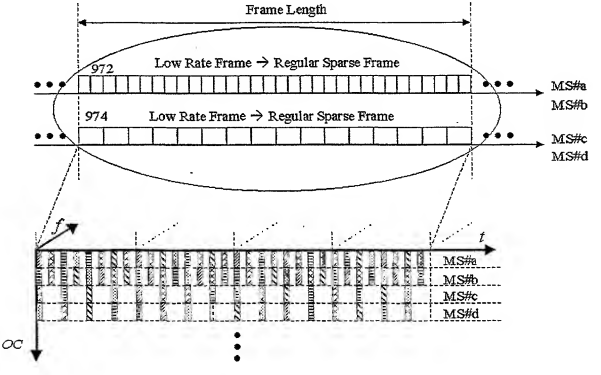

FIG. 14p

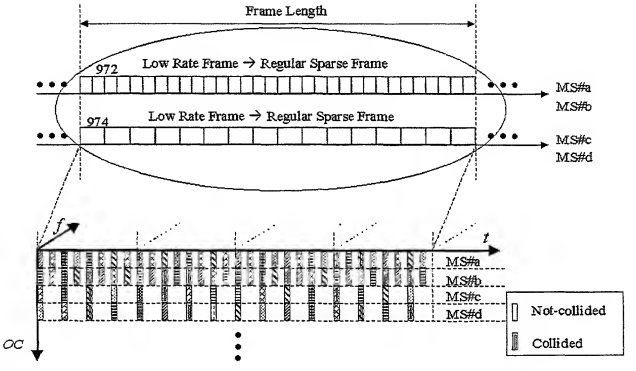

FIG. 14q

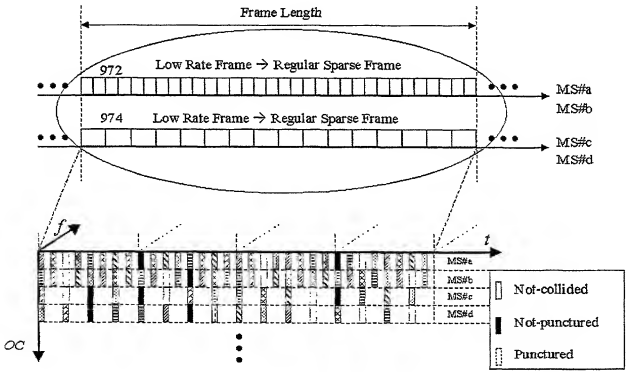

FIG. 14r

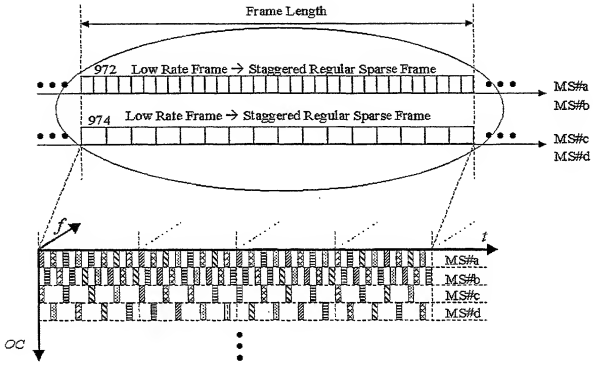

FIG. 14s

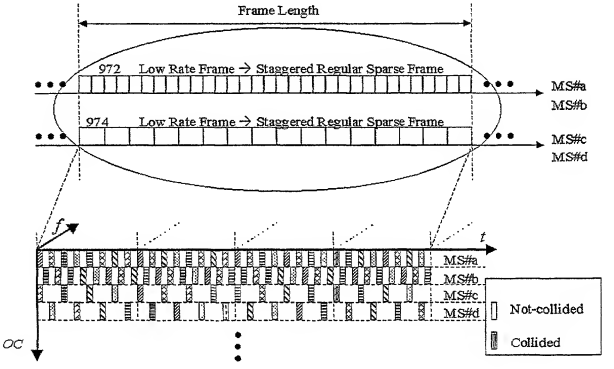

FIG. 14t

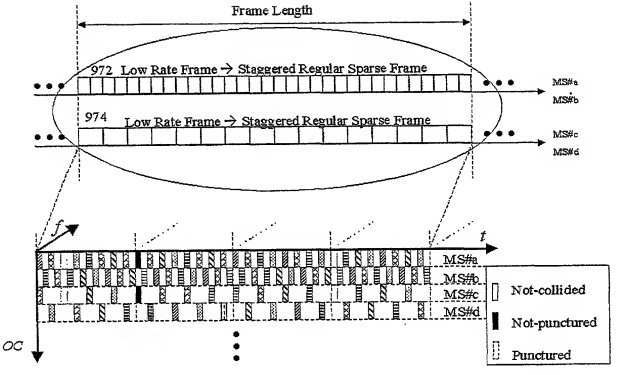

FIG. 14u

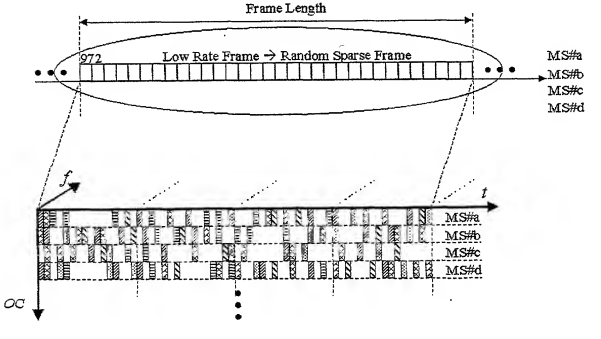

FIG. 14v

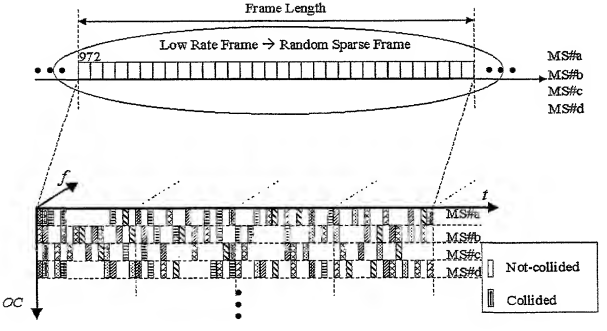

FIG. 14w

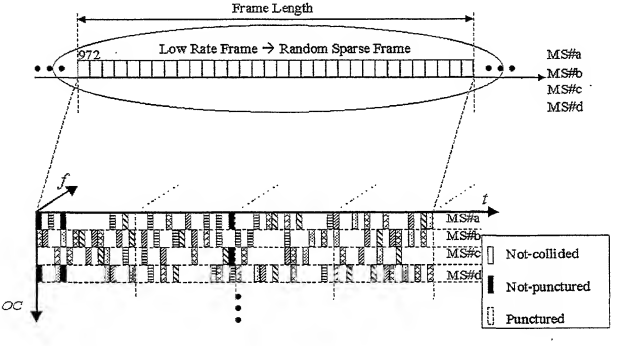

FIG. 14x

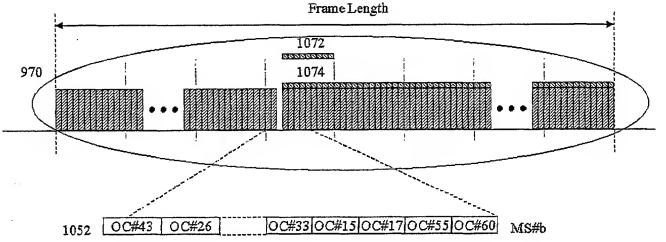
Frame Length
1072
970
1074
1052
OC#43
OC#26
OC#33
OC#15
OC#17
OC#55
OC#60
MS#b

FIG. 15

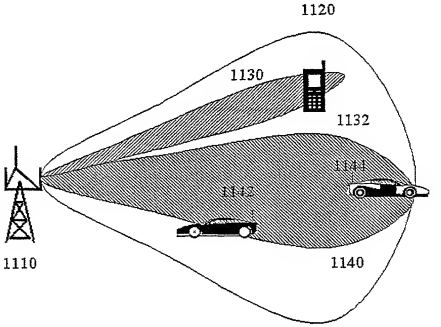
1120
1130
1132
1144
1142
1110
1140

FIG. 16